

## DRAWING INDEX

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## LEGEND

HEAVY LINE	INDICATES NEW WORK TO BE DONE
LIGHT LINE	INDICATES EXISTING TO REMAIN
DASHED DARK LINE	INDICATES DEVICE AND/OR CIRCUITRY TO BE REMOVED
NUMBER OF CABLES	
2A, B, C OR D	TYPE OF CABLE
A -	2#14 AWG, 200', 600V SHIELDED TWISTED PAIR TEFLON CABLE, CLASS E, AND BSA APPROVED N.Y.C. FOR LOCAL LAW #5.
B -	2#14 AWG, 200', 600V UNSHIELDED TWISTED PAIR TEFLON CABLE, CLASS E, AND BSA APPROVED N.Y.C. FOR LOCAL LAW #5.
C -	2#12 AWG, 200', 600V SHIELDED TWISTED PAIR TEFLON CABLE, CLASS E, AND BSA APPROVED N.Y.C. FOR LOCAL LAW #5.
D -	2#12 AWG, 200', 600V UNSHIELDED TWISTED PAIR TEFLON CABLE, CLASS E, AND BSA APPROVED N.Y.C. FOR LOCAL LAW #5.
OSC WITH INSULATED BUSHING	
FIRE ALARM CABLE, SEE GENERAL NOTE 1	
CABLE OR CONDUIT GOING UP	
CABLE OR CONDUIT GOING DOWN	
(S) -XXX	ADDRESSABLE SMOKE DETECTOR PYROTRONICS MODEL #FP-11 WITH MOUNTING BASE PYROTRONICS MODEL #DB-11 WITHOUT SUBSTITUTIONS. "XXX" REPRESENTS LAST THREE DIGIT DEVICE ADDRESS ONLY. CONTRACTOR SHALL TAG DETECTOR HEAD AND BASE WITH COMPLETE SIX DIGIT DEVICE ADDRESS (INCLUDING NETWORK/LOOP AND DEVICE ADDRESSES) AS SHOWN ABOVE. THE SINGLE DIGIT NUMERAL INDICATES INSTALLATION METHOD AS FOLLOWS:
1 -	SUSPENDED CEILING/DRY WALL MOUNTED. FOR INSTALLATION, SEE DETAIL ON DRAWING E-37.
2 -	SURFACE MOUNTED (FOR OPEN CEILING AREA ONLY). FOR INSTALLATION, SEE DETAIL ON DRAWING E-37.
(F)	RECESSED MANUAL PULL STATION, PYROTRONICS MSI-CS2 ADDRESSABLE, INSTALLED BY THE CONTRACTOR, FURNISHED BY THE AUTHORITY MOUNTING HEIGHT 48" AFF TO CENTERLINE.
(DB)	ADDRESSABLE DUAL INTELLIGENT INTERFACE MODULE, PYROTRONICS MODEL #TRI-B6D MOUNTED IN 6" x 6" x 4" JUNCTION BOX, WITHOUT SUBSTITUTION.
(SJ)	STANDPIPE TELEPHONE JACK WITH ENCLOSURE, FURNISHED BY THE AUTHORITY INSTALLED BY THE CONTRACTOR, MOUNTING HEIGHT 48" A.F.F. TO CENTERLINE RECESSED MOUNTED, UNLESS OTHERWISE INDICATED
(J)	4 11/16" SQ. JUNCTION BOX
(ATC)	ADDRESSABLE TERMINAL CABINET, 16"x14"x6" CONTINUOUS HINGE NEMA 12 ENCLOSURE W/ 14.75" x 12.88" PANEL, HOFFMAN BOX CAT. NO. A-1614CH (O.A.E.) AND HOFFMAN PANEL NO. A-16P14 (O.A.E.)
(T)	8" x 8" x 4" TENANT INTERFACE BOX WITH SCREW ON TERMINAL STRIPS AND ACCESSORIES, MOUNT ABOVE SUSPENDED T-BAR OR GWS CEILING IN THE LOCATION SHOWN ON THE DRAWINGS. FOR INSTALLATION DETAIL AND WIRING DIAGRAM SEE DWGS E-37 & E-38.
(TSC)(E)	EXISTING TERMINAL STRIP CABINET
(TS)(E)	EXISTING TAMPER SWITCH, (PROVIDE WIRING TO NEW FA SYSTEM PER WIRING DIAGRAM AND INSTALLATION DETAIL SHOWN ON DWGS. E-36 & E-37)
(FS)(E)	EXISTING WATER FLOW SWITCH, (PROVIDE WIRING TO NEW FA SYSTEM PER WIRING DIAGRAM AND INSTALLATION DETAIL SHOWN ON DWGS. E-36 & E-37)
(J)(E)	EXISTING JUNCTION BOX

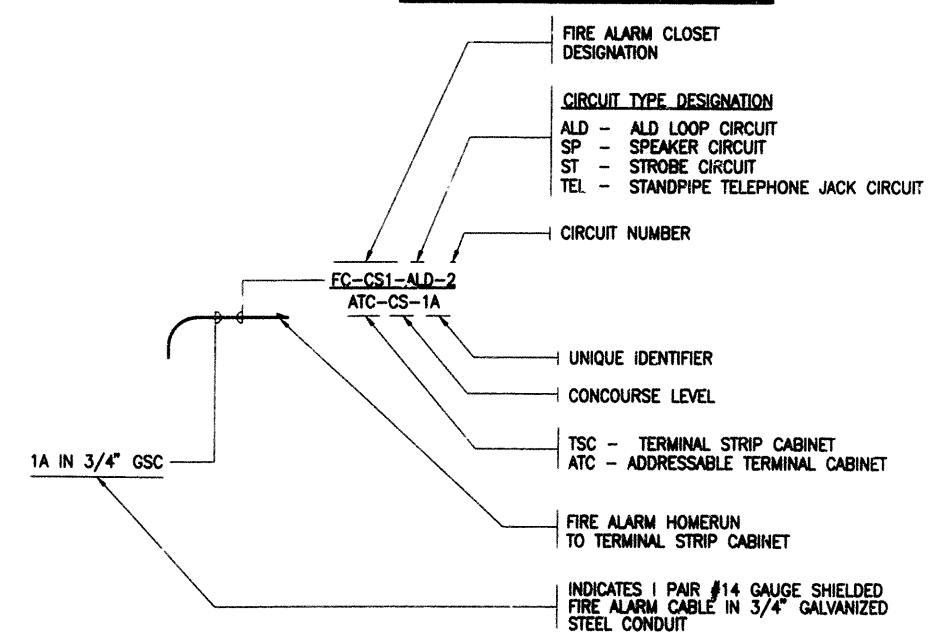
## ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR	EXIST.	EXISTING	N.T.S.	NOT TO SCALE
ALD	ANALOG LOOP DRIVER	FA	FIRE ALARM	O.A.E.	OR APPROVED EQUAL
ATC	ADDRESSABLE TERMINAL CABINET	FL	FLOOR	PB	PULL BOX
BLDG.	BUILDING	FMC	FLEXIBLE METAL CONDUIT	RM	ROOM
C	CONDUIT	GSC	GALVANIZED STEEL CONDUIT	TB	TERMINAL BLOCK
CKT	CIRCUIT	GND	GROUND	TEL	TELEPHONE
COL	COLUMN	GWB	GYPSUM WALLBOARD	TSC	TERMINAL STRIP CABINET
CONC.	CONCOURSE	JB	JUNCTION BOX	TYP	TYPICAL
CONT.	CONTINUATION	MER	MECHANICAL EQUIPMENT ROOM	U.O.N.	UNLESS OTHERWISE NOTED
DWG.	DRAWING	MEZZ	MEZZANINE	WTC	WORLD TRADE CENTER
(E)	INDICATES EXISTING EQUIPMENT EXCLUDING PULLBOXES AND CONDUIT	MTD	MOUNTED		
E.O.L.	END OF LINE RESISTOR (24k $\Omega$ )	N. I. C.	NOT IN CONTRACT		
		NTC	NETWORK TERMINAL CABINET		

## GENERAL NOTES:

- ALL FIRE ALARM CABLES SHALL BE TYPE FPLP-UL TWISTED PAIR #12 OR #14 AWG (AS SHOWN ON DRAWING), SOLID COPPER, 200' C, 600V, SHIELDED (EXCEPT FOR SPEAKERS, TAMPER AND FLOW SWITCHES WHICH USE UNSHIELDED). INSULATED CONDUCTORS, CLASS E, BSA AND MEA APPROVED FOR NYC LOCAL LAW #5 WITH FEP (TEFLON OR APPROVED EQUAL) INSULATION AND CONDUCTORS COLORED BLACK AND RED. ALL CABLES INSTALLED IN HUNG CEILING OR ABOVE PLASTER CEILING SHALL BE MOUNTED AND SUPPORTED ABOVE THE CEILING AND INSTALLED WITHOUT CONDUITS UNLESS OTHERWISE INDICATED. ALL CABLES IN OPEN AREAS AND MER'S SHALL BE INSTALLED IN CONDUITS.
- ASSEMBLE DRAIN WIRE AT BOTH ENDS OF SHIELDED CABLES USING TYPICAL SHIELD/RAIN INSULATING METHOD AS SHOWN ON DRAWING E-041-8. SHIELD MUST BE CONTINUOUS THROUGHOUT THE CIRCUIT AND INSULATED.
- ALL CONSTRUCTION STAGING OF THIS CONTRACT SHALL BE PERFORMED IN CONJUNCTION WITH THE CONSTRUCTION STAGING/SEQUENCE OF CONTRACT WTC-857.092. SEE REFERENCE DRAWING T-5 OF CONTRACT WTC-857.092.
- PROGRAMMING OF BASE BUILDING SYSTEM FIRE ALARM PANELS WILL BE BY THE AUTHORITY. PROGRAMMING OF ALL ADDRESSABLE DEVICES (SMOKE DETECTORS, PULL STATIONS & TRIS) SHALL BE BY THE CONTRACTOR. FINAL CONFIRMATION OF ADDRESSES (PRIOR TO PROGRAMMING OF DEVICES) SHALL BE AS DIRECTED BY THE ENGINEER.
- FOR MOUNTING DETAILS AND WIRING DIAGRAMS OF PULLSTATIONS, WARDEN PHONES, STANDPIPE JACKS, TELEPHONES AND SMOKE DETECTORS, SEE DRAWINGS E-36 & E-37.
- ALL CONDUIT SHALL BE RIGID STEEL, HOT DIPPED GALVANIZED WITH THREADED FITTINGS (U.O.N.).
- ALL RACEWAYS, ENCLOSURES AND BOXES SHALL BE GROUNDED IN AN APPROVED MANNER.
- ALL CONDUIT FITTINGS, BOXES, BOX COVERS AND L.B. COVERS SHALL BE PAINTED RED.
- ALL PENETRATIONS AND FINAL CONNECTIONS MADE IN EXISTING FIRE ALARM EQUIPMENT SHALL BE MADE IN THE PRESENCE OF THE ENGINEER. NO TOP PENETRATIONS SHALL BE MADE IN ANY FIRE ALARM PANELS.
- GROUND BUSHINGS SHALL BE INSTALLED ON ALL CONDUITS PENETRATING ENCLOSURES.
- ALL DEVICES AND WIRING SHALL BE LABELLED AS PER THESE DRAWINGS AND AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL USE BRADY LABELS #WML-211-292-1 (O.A.E.) FOR LABELLING OF ALL CONDUCTORS AND #WML-311-292 (O.A.E.) FOR LABELLING OF ALL CABLES.
- IN THE EVENT, THAT THE EXISTING TENANT FIRE ALARM PANELS DO NOT HAVE THE REQUIRED HARDWARE TO INTERFACE WITH THE WTC FIRE ALARM SYSTEM, OR ARE NOT COMPATIBLE WITH THE WTC FIRE ALARM SYSTEM, THEN ANY ADDITIONAL WORK DETERMINED BY THE ENGINEER FOR TROUBLE AND ALARM WIRING OF TENANT PANELS WILL BE COVERED IN ACCORDANCE WITH THE "NET COST" PROVISION OF THIS CONTRACT. SEE SPECIFICATIONS FOR EXACT PROVISION.
- ANY RELOCATIONS OF BASE BUILDING UTILITIES ABOVE THE EXISTING CONCOURSE CEILING RESULTING FROM UNFORSEEN CONDITIONS WHICH INTERFERE WITH OR PREVENT THE WORK OF ANY TRADE ENGAGED IN THE PERFORMANCE OF THE WORK DEFINED IN THIS CONTRACT (AS CONFIRMED BY THE ENGINEER) WILL BE COVERED IN ACCORDANCE WITH THE "NET COST" PROVISION OF THIS CONTRACT.
- PATCH AND SEAL ALL CONDUIT PENETRATIONS THRU WALLS, FIRE RATED CONSTRUCTION AND PLENUMS WITH THERMAFIBRE (O.A.E.).
- CONTRACTOR SHALL BE RESPONSIBLE FOR SHAPING, TESTING, LABELLING AND TERMINATING OF ALL CABLES AND CONDUCTORS AT ALL FIRE ALARM EQUIPMENT IN THIS CONTRACT INCLUDING, BUT NOT LIMITED TO, TSC'S AND ATC'S. FINAL TERMINATIONS OF CABLES INSTALLED, SHAPED AND LABELLED AT ALL TSC'S AND ATC'S UNDER CONTRACT WTC-857.092 SHALL ALSO BE PART OF THE WORK TO BE PERFORMED BY THIS CONTRACTOR UNDER THIS CONTRACT. THIS WORK SHALL BE DONE IN THE PRESENCE AND UNDER THE DIRECT SUPERVISION OF THE ENGINEER.
- LOCATION OF ALL ENCLOSED ADDRESSABLE INTERFACE MODULES SHOWN ON FLOOR PLANS ARE FOR GENERAL INFORMATION ONLY. CONTRACTOR SHALL VERIFY IN FIELD TO DETERMINE EXACT LOCATIONS.
- PRIOR TO INSTALLATION, CONTRACTOR SHALL TEST IN THE PRESENCE OF THE ENGINEER, ALL REELS OF FIRE ALARM CABLES FOR CONTINUITY AND SHORT CIRCUITS.
- ALL FIRE ALARM CABLES INSTALLED SHALL BE TESTED IN ACCORDANCE TO AUTHORITY'S ENGINEERING TEST PROCEDURES. ALL TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- CONTRACTOR SHALL COORDINATE DEVICE PENETRATIONS WITH THE ENGINEER FOR ALL NON-DRYWALL FACED WALLS.
- ALL FINISHES DISTURBED BY THE INSTALLATION OF DEVICES OR WIRING SHALL BE RESTORED TO THEIR ORIGINAL OR MATCHING CONDITION.
- THE CONTRACTOR SHALL SUPPLY ALL MATERIAL REQUIRED FOR THIS CONTRACT UNLESS OTHERWISE INDICATED.
- FOR TENANT INTERFACE BOX INSTALLATION AND WIRING DETAILS SEE DRAWINGS E-37 & E-38.
- CONTRACTOR SHALL REMOVE EXISTING FIRE ALARM DEVICES (BREAK GLASS STATIONS, STANDPIPE TELEPHONES, ETC. AND ASSOCIATED WIRING) AS DIRECTED BY THE ENGINEER. REMOVAL SHALL OCCUR ONLY AFTER THE DEVICES REQUIRED FOR THIS CONTRACT ARE INSTALLED, TESTED AND OPERATIONAL.
- CONDUIT RUNS SHALL BE INSTALLED ABOVE HUNG OR ACCESSIBLE CEILINGS AND CONCEALED IN THE HOLLOW SPACES OF WALLS AND PARTITIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER. IN OPEN CEILING AREAS WHERE CONDUIT RUNS ARE EXPOSED, THEY SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE CEILING.

## CIRCUIT HOMERUN LEGEND



Sheet 3 Of 40

THE PORT AUTHORITY  
OF NY & NJ

*James J. Bullock*  
ENGINEERING PROGRAM MANAGER  
WORLD TRADE  
CHIEF ELECTRICAL ENGINEER

*James J. Bullock*  
Engineering Program Manager

03/16/01 Drawing of Record  
No. Date Revision Approved

Engineering Department  
Design Division  
The World Trade Center

Title  
**CONCOURSE FIRE ALARM SYSTEM  
TELEPHONE AND  
ALD LOOP DEVICES**  
**ELECTRICAL**  
**DRAWING INDEX, LEGEND,  
GENERAL NOTES AND  
ABBREVIATIONS**

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

S. FELDSTEIN H. ALMARIO MIZRAHI  
Designed by Drawn by Checked by

Date MARCH 18, 1998 Scale AS SHOWN

Contract Number Drawing Number  
**WTC-857.092**  
**SUPPLEMENT NO.1** **E-1**

FILE NAME: \\Power01\E-Store\WTC-857.092\ALD\_SUPPLY\_PLANDWGSET1.DWG plotted on 5/28/1998 by JAMES